

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

see form PCT/ISA/220

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing

(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference

see form PCT/ISA/220

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/NL2004/000796

International filing date (day/month/year)

12.11.2004

Priority date (day/month/year)

25.11.2003

International Patent Classification (IPC) or both national classification and IPC

B09B3/00, B03B9/06, C22B43/00

Applicant

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1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☒ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/NL2004/000796

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material:
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing:
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/NL2004/000796

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | |
|-------------------------------|-------------|----------------|
| Novelty (N) | Yes: Claims | 6-11, 15-17 |
| | No: Claims | 1-5, 12-14 |
| Inventive step (IS) | Yes: Claims | 8-11, 15, 16 |
| | No: Claims | 1-7, 12-14, 17 |
| Industrial applicability (IA) | Yes: Claims | 1-17 |
| | No: Claims | |

2. Citations and explanations

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Re Item I

Basis of the report

The examination is carried out on the following application documents:

| | | |
|---------------------|------|----------------------|
| Description, pages: | 1-7 | as originally filed, |
| Claims, No: | 1-17 | as originally filed, |
| Drawings, sheets: | 1/1 | as originally filed. |

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

1. Reference is made to the following documents:

D1: US-A-5569154
D2: WO-A-0056474
D3: NL-A-9100119

2. The following is stated under reference to Box VIII of this Written Opinion, whereby it is to be noted that unclear features cannot be employed for assessing novelty or inventive step.
 - 2.1 The document D1 discloses (the references in parentheses applying to this document) a device for removing mercury from mercury-containing residues (see column 1, lines 7-11), comprising a gastight (see column 5, lines 20-22) screw conveyor (22) provided with an inlet (12) for mercury-containing residues, first heating means (34) for heating admitted mercury-containing residues and causing mercury to evaporate (see column 6, lines 10-20), an outlet conduit (46) for mercury vapour-

containing gas (see column 6, lines 21-24) and an outlet channel (see column 5, lines 38-42) for mercury-free residues, wherein the device is provided with pump means (66) for applying an underpressure in the screw conveyor (22) and discharging mercury vapour-containing gas therefrom (see column 6, lines 21-24), and with a distillation column (86) provided with cooling means (see column 7, lines 18-22) to cause condensation (see column 6, lines 25-26 and column 7, lines 16-29) of mercury vapour from the mercury vapour-containing gas discharged with the pump means (66).

The subject-matter of claim 1 is therefore deprived of novelty and hence, claim 1 does not meet the requirements of article 33(2) PCT.

- 2.2 It is to be noted that the subject-matter of claim 1 is equally known from D2, cf. page 1, lines 10-13, page 9, line 14 - page 20, line 12 and figures 1-5.
- 2.3 Under reference to point 2.1 above, it is stated that the document D1 discloses (the references in parentheses applying to this document) a method for removing mercury from mercury-containing residues (see column 1, lines 7-11) with a device as claimed in claim 1, comprising the steps of
- (i) admitting mercury-containing residues into a gastight screw conveyor (22) (see column 5, lines 54-57),
 - (ii) heating the admitted mercury-containing residues and causing mercury to evaporate (see column 6, lines 10-20),
 - (iii) applying an underpressure in the screw conveyor (22) and discharging mercury vapour-containing gas therefrom (see column 6, lines 21-24),
 - (iv) causing mercury to condense from the mercury vapour-containing gas discharged with the pump means (66) (see column 6, lines 25-26 and column 7, lines 16-29), and
 - (v) collecting mercury in a condensed state (see column 7, lines 25-26).

The subject-matter of claim 12 is therefore deprived of novelty and hence, claim 12 does not meet the requirements of article 33(2) PCT.

- 2.4 It is to be noted that the subject-matter of claim 12 is equally known from D2, cf. page

1, lines 10-13, page 9, line 14 - page 20, line 12 and figures 1-5.

3. Since independent claims 1 and 12 do not meet the requirements of Article 33(2) PCT, the direct dependencies of claims 2, 3, 5-9 and 11 on claim 1, respectively of claims 13-17 on claim 12, cause that it is at present questionable whether the requisite unity of invention in the sense of Rule 13.1 PCT in respect of the subject-matter of the various dependent claims still exists. Nevertheless, the following statements in respect of these dependent claims 2, 3, 5-9, 11 and 13-17 are made in this Written Opinion.

Dependent claims 2-7, 13, 14 and 17 do not appear to contain any additional features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT with respect to novelty and/or inventive step, the reasons being as follows:

- 3.1 The additional features of dependent claims 2-5, 13 and 14 are known in the field concerned, cf. the passages cited with regard to the documents D1 and D2 in the International Search Report.
- 3.2 The additional features of dependent claims 6, 7 and 17 have already been employed in a device and method for removing mercury from mercury-containing residues, cf. the passages cited with regard to the document D3 in the International Search Report. It would therefore be obvious to the person skilled in the art, to apply these features to a device and method for removing mercury from mercury-containing residues according to the document D1, thereby arriving at a device according to any of the claims 6 or 7, or a method according to claim 17.
- 3.3 The additional features of dependent claims 8-11, 15 and 16 are not disclosed by the cited prior art.

Re Item VII

Certain defects in the international application

The following is to be noted:

1. Contrary to the requirements of Rule 5.1(a)(ii) PCT, the documents D1 and D3 have not been identified in the description and their relevant background art has not been briefly discussed.
2. The unit "atm" on page 1, line 29 and page 2, line 3 is not additionally expressed in terms of the units stipulated by Rule 10.1(a) PCT.
3. According to the requirements of Rule 11.13(m) PCT the same feature shall be denoted by the same reference sign throughout the application. This requirement is not met in view of the use of the reference sign 4 (see page 5, line 12) which is used to indicate both a "motor" and a "screw conveyor".

Re Item VIII

Certain observations on the international application

With regard to Article 6 PCT, the following is remarked:

1. The term "about" in claims **13**, **14** and **16** causes a lack of clarity, because it is not clear what the limits of the technical features concerned are, cf. the PCT Guidelines, 5.38.
2. Dependent claims **13-17** relate to a method and should have been made dependent on method claim 12 rather than on device claim 11.